

CLAIMS

What is Claimed is:

1. An apparatus for aligning and soldering connectors onto an edge of a printed circuit board, the apparatus comprising:

a base having a top surface, said top surface having a slot;

a first finger clamp attached to said top surface and located between a side of said base and a side of said slot; and

a claw coupled to said top surface via said first finger clamp, said claw having a top claw side and a bottom claw side;

wherein said bottom claw side is adapted to constrain connectors onto a printed circuit board during a reflow soldering process; and

wherein said slot is dimensioned to only house a printed circuit board having properly aligned connectors.

2. The apparatus of Claim 1, wherein said slot comprises a circuit board slot and a connector slot.

3. The apparatus of Claim 2, wherein said circuit board slot and said connector slot are adapted to house a circuit board having at least two straddle-mounted connectors.

4. The apparatus of Claim 1, wherein said first finger clamp has a finger portion.

5. The apparatus of Claim 4, wherein said top claw side has a finger indentation for receiving said finger portion.

6. The apparatus of Claim 1, wherein said first finger clamp comprises four finger clamps.

7. The apparatus of Claim 1, further comprising a second finger clamp attached to said top surface and located between a second side of said base opposing the surface side nearest to said first clamp and a second side of said slot opposing the slot side nearest to said first clamp.

8. The apparatus of Claim 7, wherein said second clamp comprises a finger portion adapted to be in direct contact with a printed circuit board.

9. The apparatus of Claim 1, wherein said bottom claw side comprises a plurality of claw pins.

10. The apparatus of Claim 9, wherein said top surface comprises a plurality of pin holes adapted to receive said plurality of claw pins.

11. The apparatus of Claim 1, wherein said bottom claw side comprises a notch adapted to house the connectors mounted on an edge of a printed circuit board.

12. The apparatus of Claim 11, wherein said notch is adapted to house at least two straddle-mounted connectors.

13. The apparatus of Claim 1, wherein said slot is dimensioned to constrain the connectors from Y-axis displacement during the soldering process.

14. The apparatus of Claim 13, wherein said bottom claw side constrains the connectors from Z-axis displacement during the soldering process.

15. The apparatus of Claim 1, wherein said apparatus is comprised of a heat resistant material.

16. An assembly method for aligning and soldering connectors onto an edge
5 of a printed circuit board, the method comprising:

constructing an alignment fixture having a slot, a claw and a first finger clamp;
providing a circuit board with connectors already inserted onto the circuit board;
transferring the circuit board into said slot in said alignment fixture, wherein said
slot is dimensioned to fit only a circuit board having properly aligned connectors;
10 fitting the properly aligned circuit board into said slot;
constraining the connectors onto the circuit board with said claw, wherein said
claw is coupled to said alignment fixture via said first finger clamp; and
soldering the constrained connectors onto the circuit board using a reflow oven.

17. The method of Claim 16, wherein said slot comprises a circuit board slot
and a connector slot.

18. The method of Claim 17, wherein said circuit board slot and said
connector slot are adapted to house a circuit board having at least two straddle-
20 mounted connectors.

19. The method of Claim 16, further comprises visual inspecting the
connectors soldered onto the circuit board for proper alignment.

20. The method of Claim 16, wherein a second finger clamp constrains an
25 area near a second edge of the circuit board within said slot, the second edge opposes
the circuit board edge mounted with the connectors.

21. The method of Claim 16, wherein said claw comprises a plurality of claw pins adapted to be inserted into a plurality of pins holes on said alignment fixture.

22. The method of Claim 16, wherein said claw comprises a notch adapted to house at least two straddle-mounted connectors mounted onto an edge of a printed circuit board.

23. The method of Claim 16, said constraining step further comprises constraining the connectors from Y-axis displacement using said slot.

24. The method of Claim 23, said constraining step further comprises constraining the connectors from Z-axis displacement using said claw.

25. The method of Claim 16, wherein said constructing step further comprises constructing said alignment fixture using a heat resistant material.

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